

Higher Computing Science

Database Implementation: Calculations and Computed Fields

Exercise 3 – Answers

1. (a) `SELECT forename, surname, test1+test2+test3+test4
FROM Question1;`

forename	surname	Expr1002
Jane	Smith	30
Duncan	Scott	35
James	Webster	30
Julie	O'Brian	27
Mary	Davis	30
Adam	Young	31
Holly	Jeffreys	30
Annie	McKay	33

- (b) `SELECT forename, test1, test2, test3, test4,
(test1+test2+test3+test4/4
FROM Question1
ORDER BY (test1+test2+test3+test4)/43 DESC;`

forename	test1	test2	test3	test4	Expr1005
Duncan	10	8	9	8	6.75
Annie	7	8	8	10	5.75
Adam	10	8	7	6	6.25
Holly	8	7	6	9	5.25
Mary	9	9	7	5	6.25
James	8	6	7	9	5.25
Jane	9	7	8	6	6
Julie	7	6	9	5	5.5

2. (a) `SELECT forename, surname, hourlyRate*hoursWorked
FROM Question2;`

forename	surname	Expr1002
Kenneth	Brown	£150.00
David	Gilmour	£204.00
Ashley	Grant	£210.00
Vickie	Moore	£210.00
Laura	Green	£90.00

(b) `SELECT forename, surname, hourlyRate*hoursWorked
FROM Question2
WHERE hourlyRate*hoursWorked > 200;`

forename	surname	Expr1002
David	Gilmour	£204.00
Ashley	Grant	£210.00
Vickie	Moore	£210.00

3. (a) `SELECT round(test1/16*100), round(test2/16*100),
round(test3/16*100), round(test4/16*100),
round(test5/16*100)
FROM Question3;`

Expr1000	Expr1001	Expr1002	Expr1003	Expr1004
94	75	75	81	88
75	69	88	81	100
88	88	81	94	94
62	56	75	69	88
88	88	88	75	88

(b) `SELECT forename, surname,
round((test1+test2+test3+test4+test5)/60*100)
FROM Question3
ORDER BY round((test1+test2+test3+test4+test5)/60*100)
ASC, surname ASC;`

forename	surname	Expr1002
Bill	Johnstone	93
Bill	Johnstone	110
Harry	Smith	110
Tom	Harris	113
Ann	Clark	118

4. (a) `SELECT productName, buyingPrice, sellingPrice,
sellingPrice-buyingPrice
FROM Question4;`

productName	buyingPrice	sellingPrice	Expr1003
Mars Bar	27	42	15
Snickers	31	25	-6
Yorkie	32	45	13
Bounty	26	21	-5

(b) `SELECT productName, buyingPrice, sellingPrice,
sellingPrice - buyingPrice
FROM Question4
WHERE sellingPrice - buyingPrice < 0
ORDER BY sellingPrice - buyingPrice DESC;`

productName	buyingPrice	sellingPrice	Expr1003
Bounty	26	21	-5
Snickers	31	25	-6

5. (a) `SELECT productName, priceUK, round(priceUK*1.13,2)
FROM Question5;`

productName	priceUK	Expr1002
Basic Keyboard	£7.00	7.91
Network Card	£13.50	15.26
Optical Mouse	£7.50	8.48
Monitor	£30.00	33.9
3D Graphics Card	£30.00	33.9
Flat Screen Monitor	£75.00	84.75

(b) `SELECT productID, round(priceUK*1.39,2)
FROM Question5
WHERE round(priceUK*1.39,2) >40
ORDER BY round(priceUK*1.39,2) ASC, productID ASC;`

productID	Expr1001
034	41.7
097	41.7
102	104.25

6. (a) `SELECT fishType, pricePerKilo, numberOfKilos,
round(pricePerKilo*numberOfKilos*100)/100
FROM Question6;`

fishType	pricePerKilo	numberOfKilos	Expr1003
Anchovies	£15.00	2.5	37.5
Cod	£12.00	3.0	36
Coley	£7.00	1.0	7
Grey Mullet	£5.50	2.5	13.75
Gurnard	£5.75	3.0	17.25
Haddock	£12.00	5.0	60
Halibut	£16.45	3.5	57.58
Herring	£4.50	2.0	9
Huss	£9.80	1.5	14.7
Lemon Sole	£14.49	4.0	57.96
Mackerel	£6.79	5.0	33.95
Monkfish	£16.00	2.5	40
Plaice	£6.00	4.0	24
Red Mullet	£12.00	1.0	12
Salmon	£10.00	8.5	85
Sea Bass	£9.75	6.0	58.5
Skate	£9.95	3.0	29.85
Snapper	£13.00	2.5	32.5
Sprats	£4.00	0.5	2
Trout	£8.95	3.0	26.85

- (b) `SELECT fishType, round(pricePerKilo*numberOfKilos*100)/100
FROM Question6
WHERE round(pricePerKilo*numberOfKilos*100)/100>20
AND round(pricePerKilo*numberOfKilos*100)/100<50
ORDER BY round(pricePerKilo*numberOfKilos*100)/100 DESC;`

fishType	Expr1001
Monkfish	40
Anchovies	37.5
Cod	36
Mackerel	33.95
Snapper	32.5
Skate	29.85
Trout	26.85
Plaice	24